

Amendment to the Claims:

The claims under examination in this application, including their current status and changes made in this paper, are respectfully presented.

45 (original). In a bi-directional data transmission system that facilitates communications between a plurality of remote units and a central unit using a symbol-based discrete multi-carrier transmission scheme that has a multiplicity of discrete sub-channels provided for facilitating upstream communications between the plurality of remote units and the central unit, an apparatus for transmitting data from a selected remote unit to the central unit, comprising:

a serial to parallel converter for receiving said data and converting said data to parallel data;

an encoder coupled to said serial to parallel converter for encoding said parallel data according to one of a first and a second modulation schemes responsive to a control signal, said first modulation scheme being operative during a polled transmission mode and requires a receiver at said central unit to have prior knowledge of the identity of said selected remote unit for decoding, said second modulation scheme being operative during a fast access transmission mode and does not require the receiver at said central unit to have prior knowledge of the identity of said selected remote unit for decoding;

an IFFT modulator coupled to said encoder for modulating encoded data from said encoder; and

a parallel to serial converter coupled to said IFFT modulator for converting modulated data from said IFFT modulator to a serial format for transmission to said central unit.

46 (original). The apparatus of claim 45 wherein said first modulation scheme is QAM and said second modulation scheme is DQPSK.

47 (original). The apparatus of claim 45 or 46 wherein said polled transmission mode is operative when system usage exceeds a predefined usage threshold and said fast access transmission mode is operative when system usage falls below said predefined usage threshold.

48 (original). The apparatus of claim 47 wherein:

said selected remote unit only sends data on an unallocated sub-channel during a specific symbol period when said polled transmission mode is operative, said specific symbol period being specifically assigned to said selected remote unit for access request; and

said selected remote unit sends data on an unallocated sub-channel during any symbol period when said fast access transmission mode is operative irrespective whether said specific symbol period has been assigned to said selected remote unit for access request.

49 (currently amended). In a bi-directional data transmission system that facilitates communications between a plurality of remote units and a central unit using a symbol-based discrete multi-carrier transmission scheme that has a multiplicity of discrete sub-channels provided for facilitating upstream communications between the plurality of remote units and the central unit, an apparatus for receiving data sent from a selected remote unit to the central unit, comprising:

a serial to parallel converter for receiving said data and converting said ~~forward error-corrected~~ data to parallel data;

a FFT demodulator coupled to said serial to parallel converter for demodulating parallel data from said serial to parallel converter;

a decoder coupled to said FFT demodulator for decoding demodulated data from said FFT demodulator according to one of a first and a second demodulation schemes responsive to a control signal, said first demodulation scheme being operative during a polled transmission mode and requires prior knowledge of the identity of said selected remote unit for decoding, said second demodulation scheme being operative during a fast access transmission mode and does not require prior knowledge of the identity of said selected remote unit for decoding; and

a parallel to serial converter coupled to said decoder for converting decoded data from said decoder to a serial format.